

## CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A die oven for heating a die comprising:  
5 a heater, the heater having a heating intensity;  
a die cradle for holding the die;  
a temperature gauge in physical contact with the die when the die is placed in the die oven, the temperature gauge producing a die temperature signal; and  
a controller coupled to the temperature gauge and the heater, the controller  
10 controlling the heater in response to the die temperature signal.
2. The die oven of claim 1 where the temperature gauge is a thermocouple.
3. The die oven of claim 2 where the thermocouple is comprised of a first rod and a second rod.
4. The die oven of claim 3 further comprising an air temperature sensor for reading  
15 an air temperature within the die oven.
5. The die oven of claim 4 where the die cradle has a first mantle and a second mantle arranged so as to hold the die.
6. The die oven of claim 5 where the first rod is at least partially attached to the first mantle.
- 20 7. The die oven of claim 6 where the second rod is at least partially attached to the second mantle.
8. The die oven of claim 7 where the first rod extends laterally across the first mantle and the second rod extends laterally across the second mantle.

9. The die oven of claim 8 where the first mantle and the second mantle are juxtaposed and form an angle of about 150 degrees.

10. The die oven of claim 9 where the first mantle forms an angle of about 15 degrees with the horizontal and the second mantle form an angle of about 15 degrees with the horizontal.

5 11. The die oven of claim 10 where the first rod is composed of alumel and the second rod is composed of chromel.

12. A method for operating a die oven for heating a die, the die oven having a controller, a thermocouple in direct contact with the die, a heater, the heater having an intensity, and a controller, the controller coupled to thermocouple and the infrared heating elements,  
10 comprising:

reading the thermocouple to obtain a die temperature; and  
adjusting the intensity in response to the die temperature.

13. The method of claim 12 further comprising:  
determining whether the die is properly positioned within the die oven; and  
15 energizing the heater only if the die is properly positioned within the die oven.

14. The method of claim 13 further comprising:  
comparing the die temperature with a threshold temperature; and  
if the die temperature is greater than the threshold temperature, reducing the  
intensity.

20 15. A method for operating a die oven for heating a die, the single cell die oven having a controller, a thermocouple in direct contact with the die, an infrared heating elements having an intensity, and a controller, the controller coupled to thermocouple and the infrared heating elements, comprising:

energizing the infrared heating elements at a first intensity level;  
continuously reading a die temperature from the thermocouple;  
when the die temperature exceeds a threshold temperature, energizing the infrared  
heating elements to a second intensity level; and  
5 when the die temperature reaches a desired temperature, energizing the infrared  
heating elements to a third intensity level.

16. The method of claim 15 where, after the die temperature reaches a desired  
temperature, the intensity is continually adjusted to maintain the die temperature near the desired  
temperature.

10 17. The method of claim 16 where the first intensity level is greater than the second  
intensity level.

18. The method of claim 17 where the first intensity level is greater than the third  
intensity level.

15 19. The method of claim 18 further including the step of reading an air temperature  
within the die oven.

20. The method of claim 19 further including the step of energizing the infrared  
heating element at a second intensity level if the air temperature is at the threshold temperature.

21. A die cradle for an infrared die oven comprising:  
a first mantle;  
20 a second mantle;  
a first rod extending laterally across the first mantle;  
a second rod extending laterally across the second mantle; and  
where the first mantle and the second mantle are arranged to form a “V”.

22. The die cradle of claim 21 where the first rod extends at least partially through the first mantle.

23. The die cradle of claim 22 where the second rod extends at least partially through the second mantle.

5 24. The die cradle of claim 23 where the first mantle and the second mantle form a V-shape, the V-shape has an angle, and the angle is about 150 degrees.

25. The die cradle of claim 24 where the first mantle and the second mantle are arranged to hold a generally cylindrical die.

10 26. The die cradle of claim 25 where the first rod and the second rod are arranged so that, when a cylindrical die is placed within the first mantle and the second mantle, the first rod and the second rod are in direct contact with the cylindrical die.

27. The die cradle of claim 26 where the first rod and the second rod form a thermocouple.

15 28. The die cradle of claim 27 where the first rod is composed of alumel and the second rod is composed of chromel.